

**FIRST RECORD OF *Kratoysma* (HYMENOPTERA: EULOPHIDAE)
FROM THE NEW WORLD, INCLUDING THE
DESCRIPTION OF TWO NEW SPECIES**

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Abstract.—The genus *Kratoysma* Boucek is reported from the New World for the first time and two new species are described. *Kratoysma gliricidia* Hansson & Cave, n. sp. is described from material reared from an undescribed species of Gracillariidae on *Gliricidia sepium* (Fabaceae) in Honduras. *Kratoysma ecuadorensis* Hansson, n. sp. is described from a single swept specimen from Ecuador.

Key Words: Eulophidae, *Kratoysma*, taxonomy, biology, Honduras, Ecuador

The genus *Kratoysma* was described by Boucek (1965), including a single European species (*Derostenus usticrus* Erdös). Later, Hansson (1985) described and included two new species from Nepal (*K. longifacies* and *K. nepalensis*). Boucek (1988) described a new species of this genus from Papua New Guinea (*K. citri*), and stated that he had seen undescribed species belonging to the genus from Australia, New Guinea, India and South China. Hitherto no material of *Kratoysma* has been reported from the New World. Below two new species from the Neotropical region are described.

Hosts are known only for two of the four species. The European species, *K. usticrus*, has been reared from *Phyllocnistis suffusella* Zeller (Lep., Gracillariidae) (Boucek 1965), and the species from New Guinea has been reared from *P. citrella* Stainton (Boucek 1988). One of the new species described below was reared from an undescribed species of Gracillariidae (Lepidoptera) on *Gliricidia sepium* (Jacq.) Steud. in Honduras.

The views expressed under "Phylogeny"

are the sole responsibility of the senior author.

PHYLOGENY

The genus *Kratoysma* is regarded as most closely related to *Chrysocharis* and *Derosstenus*, according to Schauff (1991). Boucek (1965) regards the genus as intermediate between *Chrysocharis* (= *Kratochviliana*) and *Achrysocharoides* (= *Enaysma*), on the one hand, and *Pediobius* on the other hand.

In spite of the recent publication on the phylogeny of the Holarctic genera of Entedontinae (Schauff 1991), the placement of *Kratoysma* remains somewhat unclear, but I agree with Schauff that there is no close relationship between *Kratoysma* and *Pediobius*. Boucek (1965) found two characters that linked *Kratoysma* with *Pediobius*: the wing venation and the possession of plicae on the propodeum. However, in my opinion neither character is much different from some species of *Chrysocharis*. I am more inclined to agree with Schauff that *Kratoysma* is related to *Chrysocharis*. Nev-

ertheless, the similarities with *Achrysocharoides*, i.e. the hairy eyes, the shape of the male head and the pale subbasal spot of male gaster (which occurs in several different genera), as pointed out by Boucek (1965), should be stressed. The sole synapomorphy for *Kratoysma* is the straight and raised ridge-like frontal groove (Schauff 1991).

The two American species differ from the other species of *Kratoysma* in the mainly smooth and shiny scutellum, with reticulation delimited to two sublateral rows. *Kratoysma gliricidia* differs from other known species, including the new species from Ecuador, in lacking median carina(e) on the propodeum. Nevertheless, both American species without doubt belong in *Kratoysma*, sharing the apomorphy consisting of the frontal groove present as a raised ridge.

Abbreviations used in the text are: HE = height of eye; MO = width of mouth opening; MS = malar space; WH = width of head; WT = width of thorax across shoulders; PM = length of postmarginal vein; ST = length of stigmal vein; TP = length of thorax and propodeum (mesosoma of some authors); G = length of gaster. Abbreviations of museums and private collections are as follows: CH = collection of Christer Hansson; EAPZ = Escuela Agrícola Panamericana, EL Zamorano, Honduras; LUZM = Lund University Zoological Museum, Lund, Sweden; USNM = United States National Museum of Natural History, Washington, D.C., U.S.A.

Genus *Kratoysma* Boucek

Kratoysma Boucek, 1965: 5–6. Type species: *Derostenus usticrus* Erdős 1954: 346–347, by original designation and monotypy.

Diagnosis.—Frontal groove present as a straight and raised ridge; occipital margin with a strong and sharp carina along entire vertex; pronotal collar with a raised carina; propodeum with plicae; petiole at least as long as wide and with parallel sides.

Kratoysma gliricidia Hansson and Cave, NEW SPECIES Figs. 1–4

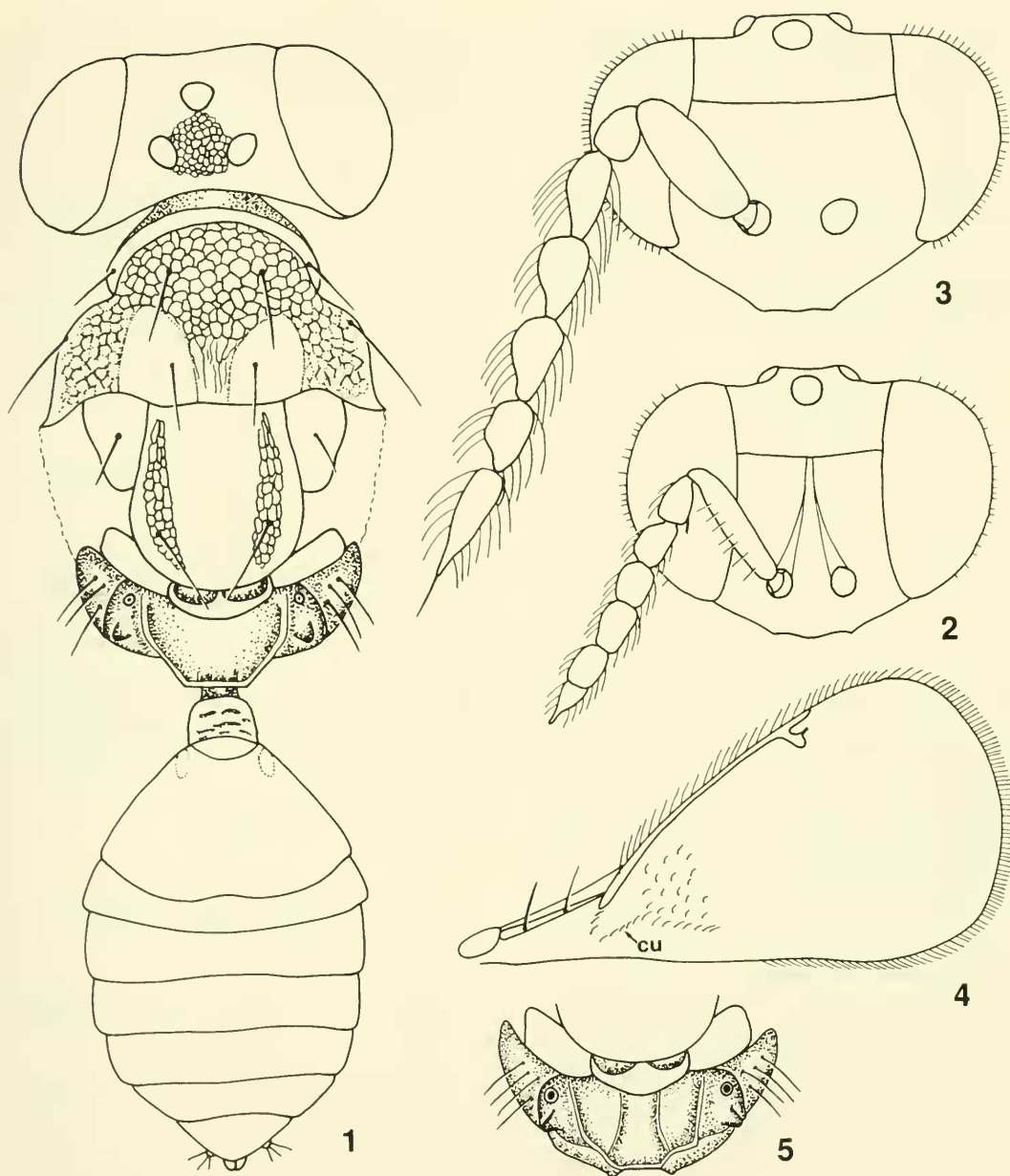
Diagnosis.—Scutellum mainly smooth and shiny, with reticulation delimited to two sublateral rows; fore coxa pale; cubital hairline distinctly curved upwards; median part of propodeum smooth, without median carinae.

Description.—Female. Scape pale, remaining antenna dark and metallic. Face golden-green. Frons below frontal groove golden, above frontal groove metallic purple. Vertex golden-green, tinged with blue at the sides. Mesoscutum golden-green, tinged with blue at the sides. Scutellum golden-green, metallic purple in the meshes of reticulation, (two small females with entire scutellum metallic purple). Propodeum golden-green. Fore coxa pale, mid and hind coxae dark and metallic; remaining parts of legs pale, except fuscous claws. Wings hyaline. Gaster golden-green, first tergite tinged with blue.

Length of body: 1.0–1.5 mm.

Head: Antenna as in Fig. 2. Face, frons above frontal groove and vertex smooth and shiny—vertex inside ocellar triangle with smoothened reticulation; frons below frontal groove with quite strong and small-meshed reticulation. Scrobal grooves never join. Frontal groove present as a straight and raised ridge. Occipital margin with a strong and sharp carina along entire vertex. Eyes densely pubescent. Ratios HE/MS/MO: 3.1/1.0/1.1. Quotient WH/WT = 1.2.

Thorax: Pronotal collar with a transverse carina. Midlobe of mesoscutum with quite strong reticulation, sidelobes with weaker reticulation; notaular depressions smooth and shiny. Scutellum smooth and shiny except strong sublateral rows of reticulation. Axillae smooth and shiny. Dorsellum smooth and shiny with two deep pits anteriorly. Propodeum smooth and shiny, with plicae—sometimes short and in some specimens completely missing; without median carina; propodeal callus with three setae.



Figs. 1–5. *Kratoysma* spp. 1–4, *Kratoysma gliricidia* n. sp. 1, Body excl. wings (dorsal). 2, Head, female (frontal). 3, Head, male (frontal). 4, Forewing, female (cu = cubital hair-line). 5, *Kratoysma ecuadorensis* n. sp., propodeum and dorsellum, female (dorsal).

Forewing with speculum closed, cubital hair-line curved upwards; postmarginal vein slightly longer than stigmal vein, quotient PM/ST = 1.3.

Gaster: Raised surface of petiole about as

long as wide with subparallel sides, surface smooth and shiny, with some transverse ridges. Ovate; mean ratio TP/G = 1.1 ± 0.07 , $n = 10$.

Male. Color same as female except: Head

uniformly brilliant metallic golden-green except for golden interocellar area; pedicel metallic green. Gaster with a large pale sub-basal spot.

Length of body: 1.4–1.6 mm.

Head: As in female except: Frons below frontal groove with quite strong reticulation and with distinctly transverse meshes. Scrobal grooves absent. Hairs on eyes longer than in female. Ratios HE/MS/MO: 3.0/1.6/1.0. Quotient WH/WT = 1.2.

Thorax: As in female.

Gaster: Narrower than in female; mean ratio TP/G = 1.2 ± 0.07 , $n = 10$.

Type material.—Holotype a female labelled “HONDURAS: Fco. Morazan, San Antonio de Oriente, El Zamorano, 15 Ago 1991.03, rcol R. Cave/Gliricidia sepium/ex: larva de Gracillariidae,” deposited in USNM. Paratypes: following with same locality and host data as holotype but with different collection dates: 6♀♀ 5♂♂ 880716, 3♀♀ 3♂♂ 880805 (1♂ in coll. CH), 1♂ 880815, 4♀♀ 2♂♂ 890627 (leg. R. Caballero), 3♀♀ 910523, 18♀♀ 11♂♂ 910815 (4♀♀ 2♂♂ in coll. CH), 7♀♀ 5♂♂ 910914 (3♀♀ 3♂♂ in coll. CH), 880721 1♀ (CH) (unless otherwise stated types are in EAPZ); 2♀♀ “HONDURAS: Fco. Morazan, Guimaca, Guaimaca, 1 Jun 1991.01, rcol R. Cave/Gliricidia sepium/ex: larva de Gracillariidae” (EAPZ), 2♀♀ from same locality as previous but collected 910921 (CH); 18♀♀ 18♂♂ “HONDURAS: Atlantida, La Ceiba, La Ceiba, 6 Jun 1991.03, rcol R. Cave/Gliricidia sepium/ex: larva de Gracillariidae” (4♀♀ 9♂♂ in coll. CH, remaining in EAPZ); 2♂♂ “HONDURAS: Fco. Morazan, Tegucigalpa, Tegucigalpa, 16 Jun 1991.01, rcol R. Cave/Gliricidia sepium/ex: larva de Gracillariidae” (EAPZ); 2♀♀ 2♂♂ “HONDURAS: Cortes, San Antonio de Cortes, Amapa, 20 Jun 1991.34, rcol. R. Cave/Gliricidia sepium/ex: larva de Gracillariidae” (EAPZ), following from same locality but collected 911003: 7♀♀ 1♂ (3♀♀ in coll. CH, remaining in EAPZ); 2♀♀ “HONDURAS: Ocotepeque, Concepcion. Playa del Rio, 5 Ago 1991.12, rcol R. Cave/Gliricidia sepium/ex: larva de Gracillari-

idae” (EAPZ); 1♀ “HONDURAS: Sta. Barbara, La Flecha, La Flecha, 8 Ago 1991.01, rcol R. Cave/Gliricidia sepium/ex: larva de Gracillariidae” (EAPZ). Paratypes (1♀ 1♂) will be distributed to the Canadian National Collections (CNC), Ottawa, Canada; California Academy of Sciences, San Francisco, California, USA; Florida State Arthropod Collection, Gainesville, Florida, USA; Lund University Zoological Museum (LUZM), Lund, Sweden; the Natural History Museum, London, England; United States National Museum of Natural History (USNM), Washington, D.C., USA.

Host and biology.—*Kratoysma gliricidia* is an endoparasitoid of the larva of a new species of Gracillariidae (Lep.) on *Gliricidia sepium*. It is the most abundant parasitoid among a complex of about six species which attack the gracillariid leafminer (RDC, unpublished data). The host larva dies after spinning a silken pupal chamber but before pupating. The number of *K. gliricidia* individuals developing per host ranges from one to three. Pupation occurs beneath the host's mine cover.

Distribution.—Honduras.

Kratoysma ecuadorensis, Hansson,

NEW SPECIES

Fig. 5

Diagnosis.—Scutellum mainly smooth and shiny, with reticulation delimited to two sublateral rows; all coxae dark; cubital hair-line almost straight; propodeum with two submedian carinae.

Description.—Female. Very similar to the female of *Kratoysma gliricidia*, except: Entire scape infusate. Anterior part of mesoscutum purplish, mesoscutum otherwise golden-green. Scutellum metallic purple. Propodeum metallic greenish-blue. All coxae dark and metallic; femora predominantly infusate; fore tarsus and 4th tarsal segment on mid and hind legs infusate; remaining parts of legs pale. Gaster brown with golden tinges.

Length of body: 1.3 mm.

Head: Ratios HE/MS/MO: 2.8/1.0/1.5. Quotient WH/WT = 1.2.

Thorax: Transverse carina along pronotal collar weak. Anterior part of axillae smooth and shiny, posterior part with quite strong reticulation. Propodeum with two submedian carinae; propodeal callus with four setae. Forewing with cubital hair-line almost straight.

Gaster: Ovate; ratio TP/G = 0.9, n = 1. Male. Unknown.

Type material.—Holotype female labelled: "Ecuador: Napo, Sacha, 9.iii.1983, leg. L. Huggert," in LUZM.

Hosts.—Unknown.

Distribution.—Ecuador.

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